

Appln. No. 09/806,738
Amendment dated September 10, 2004
Reply to Office Action of July 15, 2004

Amendments to the Claims:

Please amend claim 1 as follows. The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended). A device for Connection Admission Control for an ATM switch, intended for admitting to the switch a requested ATM connection of the DBR type, such that the "Quality of Service" of all ATM connections of the DBR type

5 in said switch continues to satisfy certain conditions, in which a single buffer with capacity B is available for the composite traffic stream of DBR connections at an output port with capacity C, while as a boundary condition it holds that ~~the~~ a total average load of the output port does not amount to more than $\rho \times$

10 C, where ρ is a constant with a value between 0 and 1, wherein ~~characterised in that~~ the device comprises ~~two~~ first and second sub-devices which each emit a positive or negative admission signal, admission to the switch only being granted to the new ATM connection if both sub-devices issue a positive admission signal,

15 wherein said first sub-device ~~(1) comprising~~ comprises:

Appln. No. 09/506,738
Amendment dated September 10, 2004
Reply to Office Action of July 15, 2004

[●] a first arithmetic unit ~~(4)~~ which calculates a ~~the~~ sum
(Σ PCR) of the nominal traffic parameters Peak Cell
Rate (PCR_i) of each of the ATM connections of the DBR
type at the a related output port, including the a
20 newly requested connection; and

[●] a second arithmetic unit ~~(6)~~ which compares the
calculated sum (Σ PCR) with the value of $\rho \times C$, the
result of the first sub-device being negative if Σ PCR
is greater than $\rho \times C$, and the result of the first
25 sub-device being positive if Σ PCR is less than or
equal to $\rho \times C$;

and wherein said second sub-device ~~(2)~~ comprising comprises:

[●] for each of the ATM connections of the DBR type at the
related output port, including the newly requested
30 connection, a third arithmetic unit ~~(7)~~, which
calculates a buffer capacity $b_{s,i}$, the value of $b_{s,i}$
being equal to zero if the product of the nominal Peak
Cell Rate (PCR_i) and Cell Delay Variation Tolerance
(CDVT_i) of the related connection is less than or equal
35 to ~~the~~ a constant K, and the value of $b_{s,i}$ being equal
to said product minus the value of K if said product is
greater than K;

Appln. No. 09/806,738
Amendment dated September 10, 2004
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- [●] a fourth arithmetic unit ~~(8)~~ which calculates a ~~the~~ sum
(B_s) of the calculated values $b_{s,i}$ for all ATM
40 connections at the related output port;
- [●] a fifth arithmetic unit ~~(9)~~ which calculates a buffer
capacity B_N , such that upon multiplexing of N
independent, identical and ideal ($CDVT = 0$) traffic
streams, using a single buffer with a buffer capacity
45 of B_N , and assuming a maximum link load having a value
of ρ , the average probability of cell loss as a result
of buffer overflow will not exceed ~~the~~ a given value of
 ϵ ;
- [●] a sixth arithmetic unit ~~(10)~~ which calculates a ~~the~~
50 product (B_{NK}) of the value of B_N and the constant value
 K ;
- [●] a seventh arithmetic unit ~~(11)~~ which determines a ~~the~~
sum (B_R) of the calculated values for B_s and B_{NK} ;
- [●] a comparison device ~~(12)~~ which compares the calculated
55 sum B_R with the given capacity B of the output buffer,
a positive admission signal being emitted if the value
of B_R is less than or equal to B , and a negative
admission signal being emitted if the value of B_R is
greater than B .